

WHAT IS CLAIMED IS:

1. A turbine casing alignment tool comprising:
a first section securable to an outer shell of a turbine casing; and
a second section securable to an inner shell of the turbine casing, wherein the alignment tool facilitates adjustment of at least one of the inner shell and the outer shell relative to the other in multiple degrees of freedom to control both co-linearity and concentricity of the outer shell and the inner shell.

2. A turbine casing alignment tool according to claim 1, wherein a top half of the turbine casing is secured to a bottom half of the turbine casing via at least a pair of connecting bolts, and wherein the first section comprises a pair of openings sized and positioned to receive the connecting bolts on the outer shell.

3. A turbine casing alignment tool according to claim 2, wherein the second section comprises a plurality of apertures sized and positioned to receive threaded bolts therein and into existing openings in the inner shell.

4. A turbine casing alignment tool according to claim 2, further comprising at least first and second adjusting screws respectively disposed in screw holes extending into said openings along axes parallel to a plane of the alignment tool and perpendicular to axes of said openings, the first and second adjusting screws effecting in-plane alignment.

5. A turbine casing alignment tool according to claim 4, wherein the first section further comprises at least one jacking bolt and ball plate assembly, the jacking bolt and ball plate assembly effecting vertical alignment.

6. A turbine casing alignment tool according to claim 1, wherein the tool is formed of steel.

7. A turbine casing alignment tool for aligning an inner shell and an outer shell of a turbine casing, the turbine casing including a top half and a bottom half connected via at least a pair of connecting bolts, the alignment tool comprising:

- a substantially flat plate extendible across both the inner shell and the outer shell of the turbine casing;

- a pair of openings through the flat plate sized and positioned to receive the connecting bolts on the outer shell;

- a plurality of apertures through the flat plate sized and positioned to receive threaded bolts therein and into existing openings in the inner shell; and

- a pair of planar adjusting mechanisms respectively engageable with the connecting bolts via the pair of openings.

8. A turbine casing alignment tool according to claim 7, wherein the planar adjusting mechanisms each comprises at least one adjusting screw disposed in a screw hole extending into a respective one of said openings along axes parallel to a plane of the alignment

tool and perpendicular to axes of said openings, the at least one adjusting screw effecting in-plane alignment.

9. A turbine casing alignment tool according to claim 8, further comprising at least one jacking bolt and ball plate assembly, the jacking bolt and ball plate assembly effecting vertical alignment.

10. A turbine casing alignment tool according to claim 8, wherein the planar adjusting mechanisms each comprises three adjusting screws disposed in respective screw holes extending into a respective one of said openings.

11. A method of aligning an inner shell and an outer shell of a turbine casing, the turbine casing including a top half and a bottom half connected via at least a pair of connecting bolts, the method comprising:

extending a substantially flat plate across both the inner shell and the outer shell of the turbine casing;

positioning the substantially flat plate over the connecting bolts on the outer shell via a pair of openings through the flat plate;

positioning the substantially flat plate to receive threaded bolts via a plurality of apertures through the flat plate and into existing openings in the inner shell; and

adjusting at least one of the inner shell and the outer shell relative to the other in multiple degrees of freedom to control both co-linearity and concentricity of the outer shell and the inner shell with a pair of planar adjusting mechanisms respectively engageable with the connecting bolts via the pair of openings.